

**Louisiana Department of Environmental Quality (LDEQ)  
Office of Environmental Services**

**STATEMENT OF BASIS**

**Catalytic Cracking Complex  
ExxonMobil Refining and Supply Company  
East Baton Rouge, East Baton Rouge Parish, Louisiana  
Agency Interest Number: 2638  
Activity Number: PER200700025  
Draft Permit 2385-V5**

**I. APPLICANT:**

**Company:**

ExxonMobil Refining and Supply Company  
P.O. Box 551  
Baton Rouge, Louisiana 70821

**Facility:**

Catalytic Cracking Complex  
4045 Scenic Highway, Baton Rouge, East Baton Rouge Parish, Louisiana  
Approximate UTM coordinates are 675.685 kilometers East and 3373.097 kilometers  
North, Zone 15

**II. FACILITY AND CURRENT PERMIT STATUS:**

ExxonMobil Refining and Supply Company (ExxonMobil) owns and operates a petroleum refinery in Baton Rouge, Louisiana (BRRF). The Catalytic Cracking Complex is an existing facility in the refinery. Previously the facility operated under Permit 2385-V0 dated September 2, 1998, Permit 2385-V1 dated February 18, 2004, Permit 2385-V2 dated October 10, 2005 and Permit 2385-V3 dated April 11, 2006. Currently the facility operates under Permit 2385-V4 dated May 13, 2008. This permit serves as a renewal/modification to the Part 70 Title V Permit for the Catalytic Cracking Complex.

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Several Part 70 permits addressing portions of the facility have already been issued. These include:

<b>Permit #</b>	<b>Units or Sources</b>	<b>Date Issued</b>
2589-V3	Light Ends	04/11/2006
2176-V3	Low Sulfur Gasoline	04/11/2006
2275-V2	Pipestill Complex	10/10/2005
2234-V3	Cokers	04/11/2006
2447-V1	Hydroprocessing	05/18/2006
2296-V2	Light Oils	08/06/2007
2261-V1	Reformer	02/02/2006
2341-V2	Specialties	08/29/2007
2047-V1	Docks	04/11/2006
2363-V0	Water Clarification Unit (WCLA)	01/25/2007
2795-V2	Refinery Tank Farm	11/29/2007
2300-V0	Sulfur Plant	03/20/2006
2926-V0	Complex Labs	08/31/2005
3060-V0	Hydrofining Unit	01/18/2008
0840-00127-V3	Marketing Terminal	01/11/2007

### **III. PROPOSED PERMIT / PROJECT INFORMATION:**

#### **Proposed Permit**

ExxonMobil submitted an application and Emission Inventory Questionnaire (EIQ) received December 13, 2007, requesting a Part 70 permit renewal/modification.

A notice requesting public comment on the permit was published in *The Advocate*, Baton Rouge. A copy of the notice was mailed to concerned citizens listed in the Office of Environmental Services Public Notice Mailing List. The application and proposed permit were submitted to the East Baton Rouge Parish Library. The proposed permit was also submitted to US EPA Region 6. All comments will be considered prior to the final permit decision.

#### **Project description**

The Catalytic Cracking Complex consists of two fluid catalytic cracking facilities that operate in parallel. These facilities are the PCLA-2 and PCLA-3. The primary function of the complex is to crack feed stock into molecules suitable for use as motor gasoline and diesel blending components. The complex has two furnaces to heat feed prior to entering the reactor. During the cracking process carbon deposits build up on the catalyst. These carbon deposits are burned off in the regenerator. Each regenerator's flue gas is combusted in its associated CO

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furnace. A wet gas scrubber removes sulfur dioxide and solid particulate before the release of the off-gases, from both CO furnaces, to the atmosphere.

Exxon Mobil Corporation reached a comprehensive agreement with the Department of Justice, Environmental Protection Agency, and Louisiana DEQ through a Consent Decree entered upon December 13, 2005. As stipulated in this decree, this modification incorporates Part 70 Specific Conditions into the permit.

**Permitted Air Emissions**

Estimated emissions from the facility in tons per year are as follows:

Pollutant	Before	After	Change
PM <sub>10</sub>	640.49	640.49	–
SO <sub>2</sub>	1336.11	1337.33	+1.22
NO <sub>x</sub>	1128.07	1128.07	–
CO	3954.26	3973.71	+19.45*
VOC	167.10	166.01	–1.09

\*The increase in CO emissions is a reconciliation due to an update in the heating value of the fuel. This update puts all emissions from combustion sources on a consistent basis.

**Prevention of Significant Deterioration Applicability**

No modification is proposed, thus PSD does not apply.

**MACT requirements**

The facility meets MACT requirement by complying with the Louisiana Refinery MACT Determination through the Louisiana Fugitive Emission Consolidation program for the project fugitives. The proposed project will comply with the appropriate MACT requirements.

**Air Modeling Analysis**

Emissions associated with the proposed renewal/modification were reviewed by the Air Quality Assessment Division to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

**General Condition XVII Activities**

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping

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requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

**Insignificant Activities**

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

**IV. Regulatory Analysis**

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms conditions and standards are provided in the Facility Specific Requirements Section of the draft permit.

**Prevention of Significant Deterioration (PSD) – Part 52**

The changes included in this permit are a reconciliation of emissions and regulatory applicability based on maintenance activities. There are no projects included in this permit that will trigger the PSD regulation.

**Non-Attainment New Source Review (NNSR) – Part 52**

The changes included in this permit are a reconciliation of emissions and regulatory applicability based on maintenance activities. There are no projects included in this permit that will trigger the NNSR regulation.

**New Source Performance Standards (NSPS) – Part 60**

**Subpart J: Standards of Performance for Petroleum Refineries**

All furnaces at the Catalytic Cracking Complex are subject to NSPS Subpart J and are identified in the permit.

**Subpart GGG: Standards of Performance for Equipment Leaks of VOC in Petroleum Refineries**

Fugitive emissions are subject to NSPS Subpart GGG. The refinery complies via the Louisiana Refinery MACT Determination.

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**National Emission Standards for Hazardous Air Pollutants (NESHAP) for  
Source Categories – Part 63**

Subpart B: Requirements for Control Technology Determination for Major  
Sources

Facilities subject (or potentially subject) to requirements of Subpart B that implement Section 112(j) of the CAA must submit Part 1 permit applications by May 15, 2002.

Subpart CC: Petroleum Refineries (Refinery MACT I)

Fugitive emissions from this permit are subject to NESHAP Subpart CC. The refinery complies via the Louisiana Refinery MACT Determination. Group 2 wastewater streams at the Catalytic Cracking Complex comply with Subpart CC through the provisions of NESHAP Subpart FF.

Subpart UUU: Petroleum Refineries (Refinery MACT II)

The FCCU regenerator vents are subject to NESHAP Subpart UUU. Regenerator flue-gases are combusted in CO furnaces to control organic HAPs. The off-gases from the CO furnaces are scrubbed by a wet gas scrubber to control inorganic HAPs before release to the atmosphere.

Subpart GGGGG: Site Remediation MACT

BRRF is an affected facility for the Site Remediation MACT. Currently BRRF does not have any affected sources subject to the following provisions of this MACT: process vents, equipment leaks, closed vent systems/control devices, or continuous monitoring systems. Remediation Materials Management Units (RMMUs) are used to manage remediation material generated from site remediation associated with unplanned releases. BRRF uses a variety of containers as RMMUs. Existing tanks and/or separators which are potentially subject to the MACT are exempt because these tanks contain remediation material with an average total VOHAP of less than 500 ppmw.

Containers are currently the only RMMU subject to the emission control requirements of Subpart GGGGG. The HAP emissions associated with these RMMUs will be controlled according to the standards of the MACT or will meet one of the provided exemptions.

**Compliance Assurance Monitoring (CAM) – Part 64**

Continuous compliance determination methods for NO<sub>x</sub> and SO<sub>2</sub> are included in the Part 70 Permit. No CAM plan is required.

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**State Operating Permit Program (Title V) – Part 70**

The current Part 70 Permit for the Catalytic Cracking Complex was granted on May 13, 2008 as permit 2385-V4. This permit is a renewal/minor modification of the current permit.

**Control of Emissions of Nitrogen Oxides – Chapter 22**

Compliance with the provisions of LAC 33:III.Chapter 22 is met via a Facility-Wide Averaging Plan.

**Comprehensive Toxic Air Pollutant Emission Control Program – Chapter 51**

The toxic air pollutant emissions from permit fugitives and storage vessels must be controlled to a degree that constitutes MACT. The refinery complies with the Louisiana Refinery MACT Determination for fugitive emissions. External floating roof tanks comply with applicable provisions of NESHAP Subpart CC and LAC 33:III.2103.D, internal floating roof tanks comply with applicable provisions of NESHAP Subpart CC.

**V. Permit Shields**

A permit shield was not requested.

**VI. Periodic Monitoring**

No periodic monitoring is required.

**VII. Applicability and Exemptions of Selected Subject Items**

See Permit.

**VIII. Streamlined Requirements**

Unit	Program Being Streamlined	Stream Applicability	Overall Most Stringent Program
CAT/FUG	LA Refinery MACT	5% VOTAP (class I and II)	LA Refinery MACT in the manner* agreed to be ExxonMobil in its approved Air Toxic Compliance Plan(April 18, 1996), per Source Notice and Agreement dated October 14, 1996
	LAC 33:III.2122	10% VOC	
	40 CFR 63 Subpart CC - modified HON option	5% VOHAP	
	40 CFR 60 Subpart GGG	10% VOC	

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**IX. Glossary**

Best Available Control Technologies (BACT) - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

Carbon Monoxide (CO) - A colorless, odorless gas which is an oxide of carbon.

Grandfathered Status- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

Hydrogen Sulfide (H<sub>2</sub>S) - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

Maximum Achievable Control Technology (MACT) - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

New Source Review (NSR) - A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO<sub>x</sub>) - Compounds whose molecules consists of nitrogen and oxygen.

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Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH<sub>4</sub>), Ethane (C<sub>2</sub>H<sub>6</sub>), Carbon Disulfide (CS<sub>2</sub>)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit:  $\geq 10$  tons per year of any toxic air pollutant;  $\geq 25$  tons of total toxic air pollutants; and  $\geq 100$  tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM<sub>10</sub>- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) - A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO<sub>2</sub>) - An oxide of sulfur.

Title V permit - See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.